

WHAT IS CLAIMED AS NEW AND IS INTENDED TO BE SECURED BY LETTERS
PATENT IS:

1. A continuous process for removing chlorosilanes from a gas stream, comprising:
contacting a gas stream containing at least one chlorosilane with water vapor in the
5 gas phase in a first stage, and

contacting said gas stream with a liquid, aqueous phase in a second stage.

2. The process of Claim 1 wherein said water vapor is steam.

3. The process of Claim 1, wherein said gas stream comprises 3 to 60% by weight of
at least one chlorosilane.

10 4. The process of Claim 2, wherein said gas stream is heated to a temperature of at
least 125°C in said first stage with steam, and the liquid, aqueous phase of said second stage
is a heterogeneous condensate of water and secondary hydrolysis products formed by cooling
the gas stream below the dew point, or the aqueous phase of said heterogeneous condensate.

5. The process of Claim 4, wherein the temperature of said first stage is 125 to 250°C.

15 6. The process of Claim 4, wherein, in said first stage, said gas stream is introduced
into the interior of a stream of said steam such that the direction of flow of said gas stream
and the direction of flow of said stream of steam are the same.

7. The process of Claim 4, wherein the weight ratio of said steam to said at least one chlorosilane is 5:1 to 100:1.

8. The process of Claim 4, wherein, in the first stage, the mixture of said gas stream and said steam flows through a vertically oriented reaction tube which projects centrally from above a cooling jacketed cylindrical cooling container into the lower third of said cooling container in which said second stage takes place, and said cooling container is cooled with flowing water.

9. The process of Claim 4, wherein said first stage is carried out in a tubular reactor which lies completely outside a cooling container, thereby forming a gas stream containing silica particles which is introduced tangentially into said cooling container.

10. The process of Claim 8, wherein said cooling container is subdivided into two cooling zones.

11. The process of Claim 9, wherein said cooling container is subdivided into two cooling zones.

12. The process of Claim 2, wherein the total treatment time of said first and said second stages together is 3 to 300 sec.

13. The process of Claim 1, wherein the temperature of said gas stream is up to 200°C.

14. The process of Claim 1, wherein the temperature of said liquid, aqueous phase has a temperature of 10 to 90°C.

15. The process of Claim 1, wherein the total treatment time of said first and said second stages together is 5 to 120 sec.

5 16. The process of Claim 1, wherein the liquid, aqueous phase is selected from the group consisting of water and a basic aqueous liquid.

17. The process of Claim 4, wherein in addition to said heterogeneous condensate of water or the aqueous phase of said heterogeneous condensate of water, said gas stream is contacted with another aqueous liquid not produced by the condensation of said steam.

10 18. The process of Claim 17, wherein said another aqueous liquid is selected from the group consisting of water and a basic aqueous liquid.

19. An apparatus for removing a chlorosilane from a gas stream comprising:
a vertically oriented tubular reactor connected to a stream of steam and said gas stream,

15 a cooling container cooled having a cooling jacket or cooling coil and provided with a drain for removing condensed liquids, and

a gas scrubber containing a solution capable of absorbing HCl,

wherein said tubular reactor extends into the interior of said cooling container so that said gas stream and said steam stream mix and flow through said tubular reactor into said
20 cooling container, and said gas scrubber is connected to said cooling container so that

uncondensed gases from said cooling container flow through said gas scrubber.

20. The apparatus of Claim 19, wherein said cooling container has an upper cooling zone and a lower cooling zone.

21. An apparatus for removing a chlorosilane from a gas stream comprising:

5 a vertically oriented tubular reactor having a cooling jacket connected to said gas stream and having walls wetted with an aqueous liquid,

a collecting container provided with a drain for removing condensed liquids and a means for recirculating condensed liquid from said collecting container to said tubular reactor, and

10 a gas scrubber containing a solution capable of absorbing HCl,

wherein said tubular reactor is connected to said collecting container so that said gas stream flows through said tubular reactor into said collecting container, and said gas scrubber is connected to said tubular reactor so that uncondensed gases flow through said gas scrubber.

15 22. The apparatus of Claim 21, wherein said tubular reactor is connected to a stream of steam so that said gas stream mixes with said steam in the interior of said tubular reactor.